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Subject: [External] Duke Energy using North Carolina-based renewable natural gas in first-of-its-kind project
Attachments: FINAL - Renewable Natural Gas.pdf

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Good morning. We are pleased to share with you some exciting news. For the first time, Duke Energy power plants are using captured emissions from our North Carolina hog farms to power homes. We consider this a major breakthrough and believe this is the first of many projects.

The Optima KV project in Duplin County has just been completed. It is capturing methane gas, moving it to a central location, cleaning and converting the gas to pipeline-quality natural gas and putting it into the Piedmont Natural Gas system to be consumed at Duke Energy's Smith Energy Complex in Richmond County.

The project is expected to produce about 11,000 megawatt-hours of electricity, which can provide power to approximately 1,000 North Carolina homes.

This project greatly advances our commitment to renewable energy in North Carolina. Please see the press release below and attached for more detail.

As always, let us know if you have any questions. Thank you.

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March 29, 2018

Duke Energy using North Carolina-based renewable natural gas in first-of-its-kind project

- **Innovative effort producing pipeline-quality biogas from North Carolina hog farms**
- **OptimaBio's project in Duplin County to spur more renewable energy**

CHARLOTTE, N.C. – A Duke Energy power plant is using renewable natural gas from North Carolina-based hog farms to produce electricity – the first application of the technology from in-state farms.

"This is a major breakthrough for renewable energy in North Carolina," said David Fountain, Duke Energy's North Carolina president. "This project allows for the capture of emissions from hog operations and converts the renewable natural gas to electricity for customers. We look forward to continuing our work on future projects."

Sometimes called directed biogas, the Optima KV project in Duplin County captures methane gas from the hog waste of five local farms. Using more than 42,000 feet of in-ground piping, the methane is moved to a central location where the gas is cleaned and converted to pipeline-quality natural gas.

The project injects the renewable natural gas into the Piedmont Natural Gas system which transports it to Duke Energy's Smith Energy Complex in Richmond County where it is used to produce electricity. Optima KV completed its interconnection to Piedmont Natural Gas last week.

"Biogas is such a rich resource for the state, especially for North Carolina's agriculture industry," said Gus Simmons of Cavanaugh & Associates, a partner of OptimaBio. "Harvesting unused organics such as swine manure from farms can create a new business opportunity for farmers, provide an in-state source of energy fuel and improve the sustainability of the agriculture and energy sectors. It's a win-win."

Announced in 2016, the project is expected to yield about 11,000 megawatt-hours of electricity – enough to power about 1,000 homes.

Historically, renewable natural gas has been used by smaller, on-site generators that are connected to the overall energy grid. Using Duke Energy's larger, more efficient plants allows more renewable energy to be created with the same amount of renewable natural gas.

"Optima KV is just the first of more projects where directed biogas will be used at Duke Energy power plants to create efficient renewable energy. Getting projects to a meaningful scale is important as we advance this innovative technology," added Fountain.

The project will help Duke Energy satisfy state swine waste-to-energy mandates under the Renewable Energy and Energy Efficiency Portfolio Standard law in North Carolina. Under this law, Duke Energy must generate 0.20 percent of its retail sales from swine waste by 2021.

Duke Energy

Headquartered in Charlotte, N.C., Duke Energy is one of the largest energy holding companies in the United States. Its Electric Utilities and Infrastructure business unit serves approximately 7.5 million customers located in six states in the Southeast and Midwest. The company's Gas Utilities and Infrastructure business unit distributes natural gas to approximately 1.6 million customers in the Carolinas, Ohio, Kentucky and Tennessee. Its Commercial Renewables business unit operates a growing renewable energy portfolio across the United States.

Duke Energy is a Fortune 125 company traded on the New York Stock Exchange under the symbol DUK. More information about the company is available at duke-energy.com.

The [Duke Energy News Center](#) serves as a multimedia resource for journalists and features news releases, helpful links, photos and videos. Hosted by Duke Energy, [illumination](#) is an online destination for stories about people, innovations, and community and environmental topics. It also offers glimpses into the past and insights into the future of energy.

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Optima Bio

Headquartered in Raleigh, N.C., Optima Bio is a swine waste-to-energy project developer and the leader in RNG development for North Carolina. It's a partnership bringing together experts in bioenergy, agriculture, project finance and environmental stewardship to invest in rural communities for the greater good. [pig.energy](#)

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